

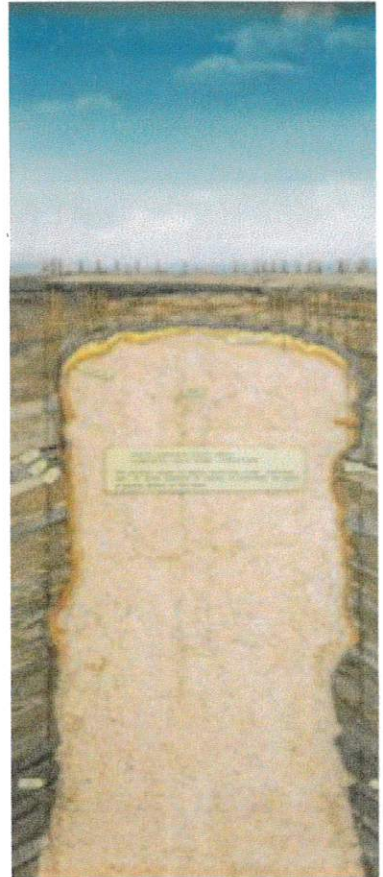
HB 89

IPP Utah's Renewable Hub

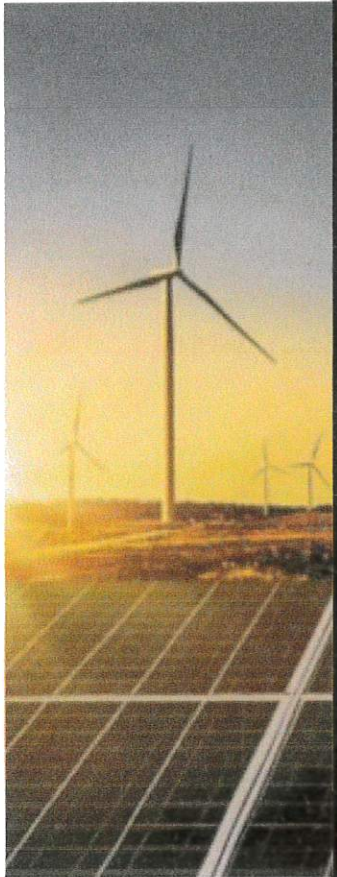
Transmission



Salt Domes



Wind



**Land and
Water**

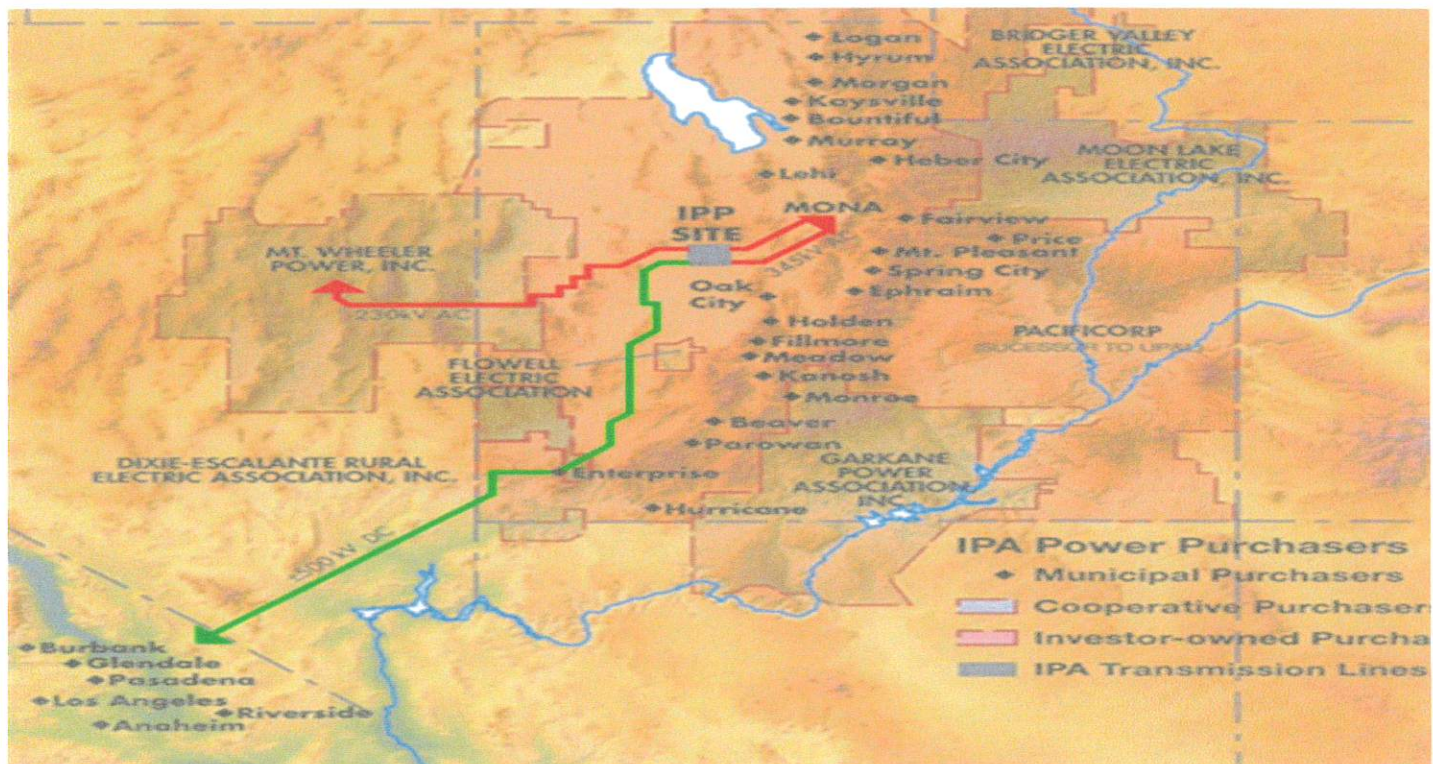


The Intermountain Power Agency is a Political Subdivision of the State of Utah.

IPP sits in a confluence of renewable resources

- **Currently interconnected to 370 MW of wind generation**
- **Secondary Path for existing Geothermal Projects and potential for additional geothermal in the area**
- **2,300 MW of current solar interconnection requests in queue**
- **1500 MW of Wyoming wind interconnects currently being discussed**

The concept for the Intermountain Power Project originated in 1973 when utility leaders from Utah and California met to begin exploring interest in a joint action agency power project.



The Intermountain Power Agency, located in Utah, is a power generating cooperative of 23 municipalities in Utah and 6 in California. It owns the Intermountain Power Plant near Delta, Utah, one of the largest coal-fired power plants in the United States.

Utah municipal owners / users are:

- Lehi City, Logan City, Town of Meadow, Monroe City, Morgan City,**
- Mount Pleasant City, Murray City, Parowan City, Town of Oak City,**
- Price City, Spring City, Fillmore City, Heber Light & Power Company**
- Town of Holden Hurricane City, Hyrum City, Town of Kanosh,**
- Kaysville City**

Utah cooperative purchasers are:

- Bridger Valley Electric Association**
- Dixie-Escalante Rural Electric Association, Inc.**
- Flowell Electric Association**
- Garkane Power Association, Inc**
- Moon Lake Electric Association, Inc.**
- Mt. Wheeler Power Inc.**

- PacifiCorp in Utah,
- and a cooperative in Nevada.

The decision to change the Project's generating resource from coal to natural gas (and ultimately hydrogen) is not a decision that was taken lightly. IPA's Board and management diligently explored options to continue coal operations in whole or in part but were prevented from preserving coal by a host of factors. These factors include the large size of IPP's coal units, limits on regional transmission capacity, persistently low natural gas prices, declining costs for renewable energy, and significant additional expenses that would be required for compliance with coal combustion residuals regulations and likely additional air emissions controls.

Given these factors, purchasers for IPP's coal-fueled electricity could not be secured after the current power purchase agreements expire, causing the IPA Board of Directors to determine that the coal generating units will cease operation in 2025. Pursuant to the Power Sales Contracts and policies adopted by the IPP Coordinating Committee and the IPA Board of Directors, the coal generating facilities and properties will be decommissioned in 2025 and dismantled and remediated thereafter.

Although undesirable, this outcome is unavoidable, and IPA is committed to sustaining the substantial economic contribution made to the State and rural Utah by vigorously pursuing efforts to diversify and provide Project benefits for its employees and surrounding communities. We believe IPP Renewed and the additional development it will attract will accomplish the goal of a long life for IPP

When 1,800 megawatts of coal-fueled generating capacity retires in 2025, only 840 megawatts of natural gas-fueled generating capacity will step into its place. Approximately 300 megawatts of wind energy are already transmitted on the system and a substantial number of additional renewable energy projects wait in the wings looking to use over 1,000 megawatts of transmission capacity.

What's more, the natural gas units to be constructed will be capable of blending 30 percent hydrogen fuel at start- up, expected to expand to 100 percent by 2045 as hydrogen technologies develop. IPP's unique location, physical facilities, trained workforce, and even the geology beneath the Project make it the ideal location for scaling up technologies such as green hydrogen production and storage, as well as Compressed Air Energy Storage. Ensuring the Future for the Intermountain Power Project

IPP Renewed

- **The use of green hydrogen as a resource. The transformational IPP Renewed project includes:**
- **Retirement of the existing coal-fueled units at the IPP site in 2025**
- **Installation of new natural gas-fueled electricity generating units capable of 840 megawatts net generation output starting up in 2025**
- **Development of hydrogen production and long-term storage capabilities.**
- **The new natural gas generating units will be designed to utilize 30 percent green hydrogen fuel at start-up, expecting to transition to 100 percent hydrogen fuel by 2045 as technology improves.**

Permitting and project design activities commenced in 2019 and the first major contracts were awarded in 2019 and 2020. Design of key facilities is well underway. Site preparation and construction is slated to begin in 2022, with new electricity generating units beginning commercial operation in July 2025 and transmission modernization completed in 2026.

Building on more than 30 years of successful regional energy cooperation at the Intermountain Power Project, IPP Renewed will ensure that central Utah continues to play a key role in Western energy markets for many more decades to come.

TARGET

100% CLEAN ENERGY BY 2045 CARBON FREE BY 2050

- **Coal Units to be retired by 2025**

Project Scope

- **840 MW Natural Gas Combined Cycle Facility (reduced from 1,200 MW)**
 - – **Estimated capacity factor = 68%**
 - – **Construction: Start – January 1, 2020**
 - **Completion – July 1, 2025**
- **2,400 MW HVDC Converter Station Replacements**
 - – **Additional Transmission support allows integration of renewables**
 - – **Construction: Start – May 1, 2021 Completion – April 1, 2026**

Project Necessity

- **Dispatchable energy required to maintain system reliability**
- **Less reliance on in-basin natural gas units and Aliso Canyon Storage facility**

Land and Water

- **IPP is located in Delta, UT with over 4,000 acres of land**
- **Fed by Utah's Servier River, IPP has secured enough water rights for its original four generating units**
- **IPP estimates that the conversion to Hydrogen will limit the use of water in creating power enabling IPP to lease irrigation water to farmers and ranchers in the Delta area.**



Underground Salt Formation

- A “one-of-a-kind” geological feature in the Western US, the underground salt dome in Delta, UT is ideal for storing hydrogen at high pressures
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- The caverns are impermeable and “self-healing”

Hydrogen Projects at IPP

With unique resources at its disposal, IPP represents a first-of- its-kind opportunity for the western energy grid. Any project at IPP

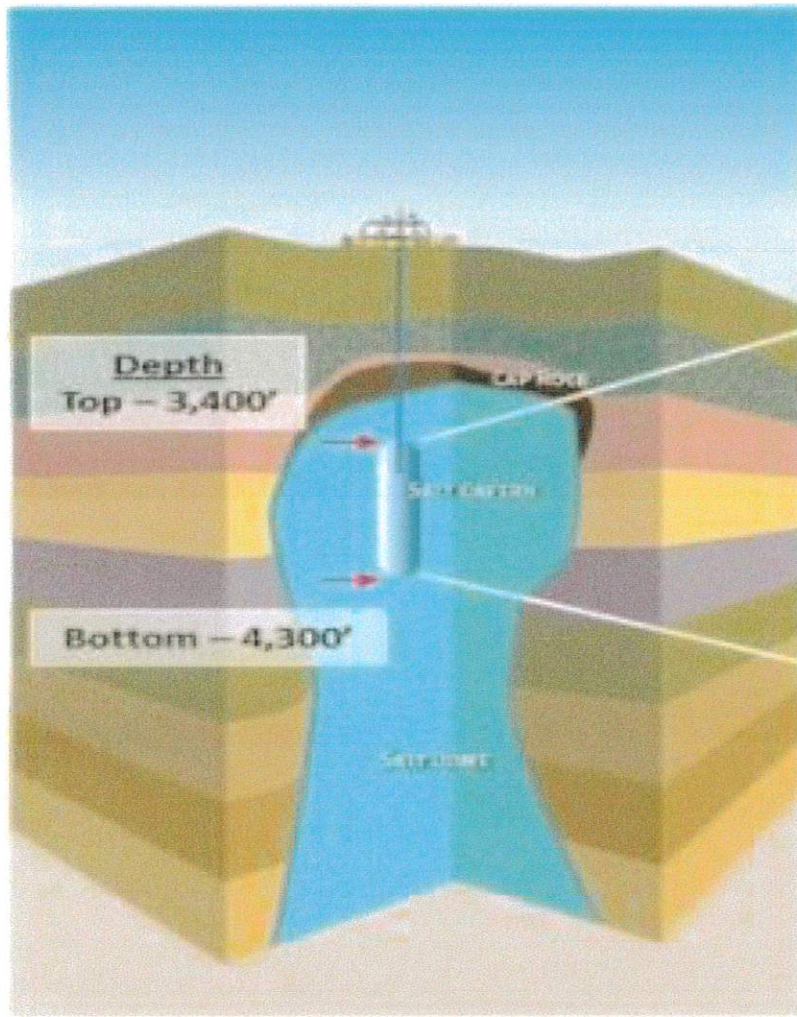
will benefit from the availability of renewables, transmission resources, and underground

A typical cavern size at IPP = 4,000,000 barrels

- **1 cavern = 5,512 tons of H₂ (operational limit)**
- **This is equivalent to:**
 - **– 200,000 hydrogen buses**
 - **– 1,000,000 fuel cell cars**
 - **– 14,000 tube trailers used for delivery**
 - **Over 100 caverns can be constructed in the salt dome at IPP**

Hydrogen Storage Potential

- **The energy storage capabilities at IPP are unique in that they allow for DAYS of storage rather than hours compared to today's Li-ion batteries. stored Generation Capacity (Days*) 87**



The Eiffel Tower
would fit perfectly
in the FLNG
cavern.



